# REL Pacific Ask A REL Response

Curriculum & Instruction
May 2021

## Question:

**What are evidence-based instructional practices using American Sign Language (ASL) for teaching students who are deaf or hard-of-hearing?**

## Response:

Following an established REL Pacific research protocol, we conducted a web-based search for resources related to American Sign Language instruction (see Methods section for search terms and resource selection criteria). Because the request included an emphasis on regular education supports, rather than special education program services, we searched for studies that discussed mainstreaming or other inclusive practices. We first prioritized studies in the Pacific and other Indigenous contexts for greater relevancy to our partners in the Pacific region; however, we included studies with more generalizable findings due to the limited amount of research available in these contexts.

References are listed in alphabetical order, not necessarily in order of relevance. Descriptions of the resources are quoted directly from the publication abstracts. We have not evaluated the quality of references and the resources provided in this response. We offer them only for your reference. Also, our search included the most commonly used research resources, but they are not comprehensive and other relevant references and resources may exist.

### Research References

Appanah, T. M., & Hoffman, N. (2014). Using scaffolded self-editing to improve the writing of signing adolescent deaf students. *American Annals of the Deaf, 159*(3), 269–283. https://eric.ed.gov/?id=EJ1071321

> *From the abstract:* "The authors investigated the impact of the Deaf Student Editing Rubric (DSER) as a self-editing tool on the writing performance of prelingually profoundly deaf adolescent students whose first language is American Sign Language. The DSER was developed by the first author. The study participants included 15 Deaf students in 4 classrooms in grades 7-12. Writing samples were analyzed for all students, and the level of rubric use was assessed. Eight of the students were interviewed about their use of the DSER. Although all students in the sample increased their mean scores in word choice, sentence fluency, and conventions, results indicated that only the interviewed group showed significant improvement in their writing. Students' writing performance indicated that the DSER was most effective when students talked with an adult about their use of the rubric."

Dostal, H. M., & Wolbers, K. A. (2014). Developing language and writing skills of deaf and hard of hearing students: A simultaneous approach. *Literacy Research and Instruction, 53*(3), 245–268. https://eric.ed.gov/?id=EJ1028689

> *From the abstract:* "In school, deaf and hard of hearing students (d/hh) are often exposed to American Sign Language (ASL) while also developing literacy skills in English. ASL does not have a written form, but is a fully accessible language to the d/hh through which it is possible to mediate understanding, draw on prior experiences, and engage critical thinking and reasoning (Allington & Johnston, 2002; Vygotsky, 1987; Wertsch, 1991). This study investigates the impact of Strategic and Interactive Writing Instruction (SIWI) on the development of signed expressive language (ASL) and written English. Our analysis demonstrates that a focus on ASL did not detract from students' writing growth in English. Instead, a focus on building ASL and written English proficiency simultaneously resulted in significant gains in both language and writing."

Guardino, C., Cannon, J. E., Eberst, K. (2014). Building the evidence-based of effective reading strategies to use with deaf English-language learners. *Communication Disorders Quarterly, 35*(2), 59–73. https://eric.ed.gov/?id=EJ1019150

> *From the abstract:* "Nearly 25% of Deaf and Hard of Hearing (DHH) students come from homes where a language other than English is used and are known as English-Language Learners (ELLs). Evidence-based practices used to teach students who are DHH ELLs are imperative. To build an evidence-base, successful strategies must be examined across multiple researchers, sites, and participants. This research is a replication of an effective reading strategy; teaching vocabulary using repeated preteaching sessions paired with viewing American Sign Language books on DVD. Five participants with severe to profound hearing loss participated in this multiple-baseline design (ABC) across three sets of five vocabulary words study. Results indicated that after three sessions of preteaching and viewing the DVD, the majority of participants signed correctly 90% to 100% of the targeted vocabulary. Maintenance data were collected 1 to 5 weeks following the intervention. Implications for practitioners and researchers are discussed."

Kang, K. Y., & Scott, J. A. (2021). The experiences of and teaching strategies for deaf and hard of hearing foreign language learners: A systematic review of the literature. *American Annals of the Deaf, 165*(5), 527–547. http://gupress.gallaudet.edu/annals/AAD165.5abs3.pdf

> *From the abstract:* "Although foreign language (FL) educational experiences for students with disabilities including deaf and hard of hearing (DHH) students, are becoming more common, there is little research available on this topic. The purpose of the present review was to identify research examining DHH students' FL learning experiences and teaching strategies used in the FL class to facilitate language learning. The search showed that few studies have explored this area, and even fewer have met quality standards. Among the existing studies, the results revealed that communication methods in FL class instruction that do not meet the communicative needs of DHH students can hinder learning and lead to demotivation. Conversely, the presence of individualized learning goals and an emphasis on reading and writing, over speaking and listening, appear to support FL learning. Finally, the use of technology is a promising tool for FL instruction."

Kurz, K. B., Schick, B., Hauser, P. C. (2015). Deaf children's science content learning in direct instruction versus interpreted instruction. *Journal of Science Education for Students with Disabilities, 18*(1), 23–37. https://eric.ed.gov/?id=EJ1169424

> *From the abstract:* "This research study compared learning of 6-9th grade deaf students under two modes of educational delivery—interpreted vs. direct instruction using science lessons. Nineteen deaf students participated in the study in which they were taught six science lessons in American Sign Language. In one condition, the lessons were taught by a hearing teacher in English and were translated in ASL via a professional and certified interpreter. In the second condition, the lessons were taught to the students in ASL by a deaf teacher. All students saw three lessons delivered via an interpreter and three different lessons in direct ASL; the order of delivery of each presentation was counter balanced between the two groups of students. Following the instruction, each group was tested on the science lecture materials with thirty-six comprehension questions. Results indicated that deaf students who received direct instruction in ASL from the deaf teacher scored higher on content knowledge."

Marschark, M., Spencer, P. E., Adams, J., & Sapere, P. (2011). Evidence-based practice in educating deaf and hard-of-hearing children: teaching to their cognitive strengths and needs. *European Journal of Special Needs Education, 26*(1), 3–16. https://eric.ed.gov/?id=EJ917906

> *From the abstract:* "This paper examines research findings concerning the loci of the pervasive academic underachievement among deaf and hard-of-hearing (DHH) children and issues associated with interventions and instructional methods that could help to reduce or eliminate it. Investigators have hypothesised that at least 50% of the variability in DHH students' achievement may be because of instructional factors, and several studies have indicated that when taught by experienced teachers of the deaf in mixed classrooms, DHH students may gain just as much as their hearing peers. Only recently, however, have findings begun to emerge concerning related language and cognitive differences between DHH and hearing students as well as instructional differences between teachers with and without experience in teaching DHH students. Building on convergent evidence from such studies offers the prospect of a significant improvement in academic outcomes for those children in the future."

Raven, S., & Whitman, G. M. (2019). Science in silence: How educators of the deaf and hard-of-hearing teach science. *Research in Science Education, 49*(4), 1001–1012. https://eric.ed.gov/?id=EJ1223034

> *From the abstract:* "Science learning is inextricably tied to two aspects of students' lives: literacy and culture. While English Learners (ELs) who speak a non-English native language are typically the focus in this line of scholarly inquiry, deaf and hard-of-hearing (DHH) students occupy a distinct space in this conversation. For DHH learners, literacy levels can be hindered by an early dependence on a more survival-based language learning model that postpones basic scientific inquiry. The vocabulary for curiosity is limited, which in turn affects the educational culture. DHH learners have a unique culture that demands an appropriate science curriculum, which thus far has not been explored or attempted for either DHH learners or their educators. Data collected consisted of interviews with teachers of DHH students, as well as observational data collected from a high-minority urban K-8 school for DHH students. The analysis revealed that, first, many of the teachers had limited preparation to teach science content. Second, DHH teachers used inconsistent instructional

strategies ranging from drawing pictures to building models. Third, the modifications provided to DHH science learners were mostly limited to visual support and repetition. Implications for teacher education programs include instruction focused on specific supports for DHH students and co-teaching methods, and deeper investigation of inquiry-based science practices. Implications for classroom practices include providing hands-on, inquiry-based instruction, working closely with parents, and developing students' and teachers' understanding of scientific inquiry."

Salehomoum, M. (2020). Inclusion of signing deaf or hard-of hearing students: Factors that facilitate versus challenge access and participation. *Perspectives of the ASHA Special Interest Groups, 5*(4), 971–983. https://pubs.asha.org/doi/full/10.1044/2020_PERSP-19-00124

*From the abstract:* "Purpose: Past studies have consistently indicated a need for improvements in inclusive educational practices. Many have focused on a single actor (e.g., the student), not taking into account the interactive nature of communication. Method: A qualitative study, involving multiple participants in two subject area general education high school classrooms, was completed to examine factors that promote versus challenge deaf or hard-of-hearing (DHH) students' access to communication and participation in classroom activities. Participants included four classroom teachers, two sign language interpreters, and three DHH students who used sign language as their primary mode of communication. Data consisted of eight 60- to 75-min in-class observations, two interviews, and three questionnaires. Data were analyzed using a participation framework of interaction as coordinated linguistic and nonlinguistic actions between multiple actors. Results: Despite the availability of technological tools and sign language interpretation, DHH students had inconsistent access to classroom communication and lower participation than their hearing peers. Conclusions: The results correspond to those of past studies, which suggest a research-to-practice gap that needs to be addressed if we are to see improvements in inclusive practices, particularly for students who use signed communication. Several recommendations are proposed in consideration of teacher, interpreter, and student as integral participants. Speech-language pathologists can participate in assessing whether inclusive education is meeting desired results and contribute to the development and implementation of necessary adaptations. Future studies are needed to systematically examine the efficacy of specific education and training programs."

*Note: REL Pacific was unable to locate a free link to the full-text version of this resource. Although REL Pacific tries to provide publicly available resources whenever possible, this resource may be of sufficient interest to the reader to warrant finding it through university or public library systems.*

Swanick, R. (2017). *Languages and languaging in deaf education: A framework for pedagogy.* Oxford University Press. https://www.google.com/books/edition/_/-r9LDQAAQBAJ?hl=en&gbpv=0

*From the description: "*Languages and Languaging in Deaf Education offers a profound vision for deaf education and studies, as author Ruth Swanwick offers bold contributions towards a new pedagogical framework. With a primary focus on the language and learning experiences of deaf children, this book creates a crucial dialogue between the field of deaf education and studies and the wider field of language education and research. Swanwick's fresh perspective on languages and languaging in deaf education brings new understandings of children's language repertoire, and further extends the meaning and application of dynamic plurilingual pedagogies. Ruth Swanwick addresses two major questions essential to the field: How do we understand and describe deaf children's language use and experience in terms of current concepts of language plurality and diversity? And, how does knowledge of, and a different perspective on, deaf children's language

diversity and pluralism inform pedagogy? In this latest addition to the Professional Perspectives on Deafness series, Swanwick presents a new framework to imagine the classroom, synthesizing multilingual language practices, translanguaging, research, and practice."

van Staden, A. (2013). An evaluation of an intervention using sign language and multi-sensory coding to support word learning and reading comprehension of deaf signing children. *Child Language Teaching and Therapy, 29*, 305–318. https://eric.ed.gov/?id=EJ1019044

*From the abstract:* "The reading skills of many deaf children lag several years behind those of hearing children, and there is a need for identifying reading difficulties and implementing effective reading support strategies in this population. This study embraces a balanced reading approach, and investigates the efficacy of applying multi-sensory coding strategies and reading scaffolding to facilitate elementary phase deaf readers' reading development. Sign language—in combination with multiple visual, tactile and kinaesthetic coding strategies and reading scaffolding techniques—was used to facilitate literacy and vocabulary development. Participants were 64 children, diagnosed with severe to profound bilateral hearing loss and aged from 6.03 to 11.08 years (mean age 9.37 years). Participants were randomly assigned to an experimental and a control group. There were no significant differences between the groups pre-intervention on measures of sight word fluency, word recognition, receptive and expressive vocabulary knowledge and reading comprehension. Results demonstrated a significant increase in reading and vocabulary skills of deaf readers who received the balanced reading approach intervention, as compared to the control group who received usual classroom instruction. The article concludes with a discussion of the theoretical and pedagogical implications these findings have for deaf children's reading and literacy development."

Xie, Y., Potmešil, M., & Peters, B. (2014). Children who are deaf or hard of hearing in inclusive educational settings: A literature review on interactions with peers. *Journal of Deaf Studies and Deaf Education, 19*(4), 423–437. https://eric.ed.gov/?id=EJ1042307

*From the abstract:* "This review is conducted to describe how children who are deaf or hard of hearing (D/HH) interact with hearing peers in inclusive settings, illustrate the difficulties and challenges faced by them in interacting with peers, and identify effective interventions that promote their social interaction in inclusive education. A systematic search of databases and journals identified 21 papers that met the inclusion criteria. Two broad themes emerged from an analysis of the literatures, which included processes and outcomes of interactions with peers and intervention programs. The research indicates that children who are D/HH face great difficulties in communicating, initiating/entering, and maintaining interactions with hearing peers in inclusive settings. The co-enrollment and social skills training programs are considered to be effective interventions for their social interaction. Communication abilities and social skills of children who are D/HH, responses of children with normal hearing, and the effect of environment are highlighted as crucial aspects of social interactions. In addition, future research is needed to study the interaction between children who are D/HH and hearing peers in natural settings, at different stages of school life, as well as improving social interaction and establishing an inclusive classroom climate for children who are D/HH."

## Methods

### *Keywords and Search Strings*

The following keywords and search strings were used to search the reference databases and other sources:

- "Sign language" and "Pacific"
- "Sign language" and "indigenous"
- "American Sign Language" (limiters: Teaching Methods; Since 2012; Instructional Effectiveness)
- "American Sign Language" and "teaching methods"
- "ASL" and "instruction" (limiter: Since 2012)

### *Databases and Resources*

We searched ERIC, a free online library of more than 1.6 million citations of education research sponsored by the Institute of Education Sciences, for relevant resources. Additionally, we searched Google Scholar and the American Speech-Language-Hearing Association.

### *Reference Search and Selection Criteria*

REL Pacific searched ERIC and other academic journal databases for studies that were published in English-language peer-reviewed research journals within the last 20 years. Sources included in this document were last accessed in May 2021.

REL Pacific prioritized documents that are accessible online and publicly available, and prioritized references that provide practical information based on peer-reviewed research for the teachers and leaders who requested this Ask A REL.[1] For questions with small or nonexistent research bases, we may rely on, for example, white papers, guides, reviews in non-peer-reviewed journals, interviews with content specialists, and organization websites. Additional methodological priorities/considerations given in the review and selection of the references were:

- Study types—randomized control trials, quasi experiments, surveys, descriptive data analyses, literature reviews, etc.
- Target population, sample size, study duration, etc.
- Limitations, generalizability of the findings and conclusions, etc.

[1] This memorandum is one in a series of quick-turnaround responses to specific questions posed by education stakeholders in the Pacific Region (American Samoa, the Commonwealth of the Northern Mariana Islands, the Federated States of Micronesia, Guam, Hawai'i, the Republic of the Marshall Islands, and the Republic of Palau), which is served by the Regional Educational Laboratory (REL Pacific) at McREL International. This memorandum was prepared by REL Pacific under a contract with the U.S. Department of Education's Institute of Education Sciences (IES), Contract ED-IES-17-C-0010, administered by McREL International. Its content does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.